

SEQUENCE LISTING

<110> Patience, Clive
Oldmixon, Beth
Ericsson, Thomas

<120> Molecular Sequence of Pig Endogenous Retrovirus Receptor and Methods of Use

<130> 329579-3

<150> US/60/285,103

<151> 2001-04-20

<160> 23

<170> PatentIn version 3.0

<210> 1

<211> 1959

<212> DNA

<213> Viral

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 <212> PRT
 <213> Viral

<400> 2

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Leu Thr Leu Ser Ile Thr Pro Gln Val Asn Gly Lys Arg Leu Val Asn
 35 40 45

Ser Pro Asn Ser His Lys Pro Leu Ser Leu Thr Trp Leu Leu Thr Asp
 50 55 60

Ser Gly Thr Gly Ile Asn Ile Asn Ser Thr Gln Gly Glu Ala Pro Leu
 65 70 75 80

Gly Thr Trp Trp Pro Glu Leu Tyr Val Cys Leu Arg Ser Val Ile Pro
 85 90 95

Gly Leu Asn Asp Gln Ala Thr Pro Pro Asp Val Leu Arg Ala Tyr Gly
 100 105 110

Phe Tyr Val Cys Pro Gly Pro Pro Asn Asn Glu Glu Tyr Cys Gly Asn
 115 120 125

Pro Gln Asp Phe Phe Cys Lys Gln Trp Ser Cys Val Thr Ser Asn Asp
 130 135 140

Gly Asn Trp Lys Trp Pro Val Ser Gln Gln Asp Arg Val Ser Tyr Ser
 145 150 155 160

Phe Val Asn Asn Pro Thr Ser Tyr Asn Gln Phe Asn Tyr Gly His Gly
 165 170 175

Arg Trp Lys Asp Trp Gln Gln Arg Val Gln Lys Asp Val Arg Asn Lys
 180 185 190

Gln Ile Ser Cys His Ser Leu Asp Leu Asp Tyr Leu Lys Ile Ser Phe
 195 200 205

Thr Glu Lys Gly Lys Gln Glu Asn Ile Leu Lys Trp Val His Gly Met
 210 215 220

Ser Trp Gly Met Val Tyr Tyr Gly Gly Ser Gly Lys Gln Pro Gly Ser
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Ile Leu Thr Ile Arg Leu Lys Ile Asn Gln Leu Glu Pro Pro Met Ala
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 <212> PRT
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<400> 4

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Leu	Thr	Leu	Ser	Ile	Thr	Pro	Gln	Val	Asn	Gly	Lys	Arg	Leu	Val	Asp	35	40	45	
Ser	Pro	Asn	Ser	His	Lys	Pro	Leu	Ser	Leu	Thr	Trp	Leu	Leu	Thr	Asp	50	55	60	
Ser	Gly	Thr	Gly	Ile	Asn	Ile	Asn	Ser	Thr	Gln	Gly	Glu	Ala	Pro	Leu	65	70	75	80
Gly	Thr	Trp	Trp	Pro	Glu	Leu	Tyr	Val	Cys	Leu	Arg	Ser	Val	Ile	Pro	85	90	95	
Gly	Leu	Asn	Asp	Gln	Ala	Thr	Pro	Pro	Asp	Val	Leu	Arg	Ala	Tyr	Gly	100	105	110	
Phe	Tyr	Val	Cys	Pro	Gly	Pro	Pro	Asn	Asn	Glu	Glu	Tyr	Cys	Gly	Asn	115	120	125	
Pro	Gln	Asp	Phe	Phe	Cys	Lys	Gln	Trp	Ser	Cys	Val	Thr	Ser	Asn	Asp	130	135	140	
Gly	Asn	Trp	Lys	Trp	Pro	Val	Ser	Gln	Gln	Asp	Arg	Val	Ser	Tyr	Ser	145	150	155	160
Phe	Val	Asn	Asn	Pro	Thr	Ser	Tyr	Asn	Gln	Phe	Asn	Tyr	Gly	His	Gly	165	170	175	
Arg	Trp	Lys	Asp	Trp	Gln	Gln	Arg	Val	Gln	Lys	Asp	Val	Arg	Asn	Lys	180	185	190	
Gln	Ile	Ser	Cys	His	Ser	Leu	Asp	Leu	Asp	Tyr	Leu	Lys	Ile	Ser	Phe	195	200	205	
Thr	Glu	Lys	Gly	Lys	Gln	Glu	Asn	Ile	Leu	Lys	Trp	Val	Asn	Gly	Met	210	215	220	
Ser	Trp	Gly	Met	Val	Tyr	Tyr	Gly	Gly	Ser	Gly	Lys	Gln	Pro	Gly	Ser	225	230	235	240
Ile	Leu	Thr	Ile	Arg	Leu	Lys	Ile	Asn	Gln	Leu	Glu	Pro	Pro	Met	Ala	245	250	255	
Ile	Gly	Pro	Asn	Thr	Val	Leu	Thr	Gly	Gln	Arg	Pro	Pro	Thr	Gln	Gly	260	265	270	

580	585	590
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Leu Leu Leu Leu Leu Thr Val Gly Pro Cys Ile Ile Asn Lys Leu Ile		
610	615	620
Ala Phe Ile Arg Glu Arg Ile Ser Ala Val Gln Ile Met Val Leu Arg		
625	630	635 640
Gln Gln Tyr Gln Ser Pro Ser Ser Arg Glu Ala Gly Arg		
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 <212> DNA
 <213> Artificial

<220>
 <223> PCR Primer Oligonucleotide

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<210> 6
 <211> 18
 <212> DNA
 <213> Artificial

<220>
 <223> PCR Primer Oligonucleotide

<400> 6
 gatgtttggc cgaggcgg 18

<210> 7
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 <212> DNA
 <213> Artificial

<220>
 <223> PCR Primer Oligonucleotide

<400> 7
 ccaaagcatc tttggaccta cc 22

<210> 8
 <211> 20
 <212> DNA
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<220>
 <223> PCR Primer Oligonucleotide

<400> 8
tcacgatgaa gacaggtggg

20

<210> 9
<211> 1853
<212> DNA
<213> Homo sapiens

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<210> 10
<211> 445
<212> PRT
<213> Homo sapiens

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Ala Leu Phe Gly Met Gly Ser Trp Ala Ala Val Asn Gly Ile Trp Val
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Glu Leu Pro Val Val Val Lys Glu Leu Pro Glu Gly Trp Ser Leu Pro
35 40 45

Ser Tyr Val Ser Val Leu Val Ala Leu Gly Asn Leu Gly Leu Leu Val
 50 55 60
 Val Thr Leu Trp Arg Arg Leu Ala Pro Gly Lys Asp Glu Gln Val Pro
 65 70 75 80
 Ile Arg Val Val Gln Val Leu Gly Met Val Gly Thr Ala Leu Leu Ala
 85 90 95
 Ser Leu Trp His His Val Ala Pro Val Ala Gly Gln Leu His Ser Val
 100 105 110
 Ala Phe Leu Ala Leu Ala Phe Val Leu Ala Leu Ala Cys Cys Ala Ser
 115 120 125
 Asn Val Thr Phe Leu Pro Phe Leu Ser His Leu Pro Pro Arg Phe Leu
 130 135 140
 Arg Ser Phe Phe Leu Gly Gln Gly Leu Ser Ala Leu Leu Pro Cys Val
 145 150 155 160
 Leu Ala Leu Val Gln Gly Val Gly Arg Leu Glu Cys Pro Pro Ala Pro
 165 170 175
 Ile Asn Gly Thr Pro Gly Pro Pro Leu Asp Phe Leu Glu Arg Phe Pro
 180 185 190
 Ala Ser Thr Phe Phe Trp Ala Leu Thr Ala Leu Leu Val Ala Ser Ala
 195 200 205
 Ala Ala Phe Gln Gly Leu Leu Leu Leu Leu Pro Pro Pro Pro Ser Val
 210 215 220
 Pro Thr Gly Glu Leu Gly Ser Gly Leu Gln Val Gly Ala Pro Gly Ala
 225 230 235 240
 Glu Glu Glu Val Glu Glu Ser Ser Pro Leu Gln Glu Pro Pro Ser Gln
 245 250 255
 Ala Ala Gly Thr Thr Pro Gly Pro Asp Pro Lys Ala Tyr Gln Leu Leu
 260 265 270
 Ser Ala Arg Ser Ala Cys Leu Leu Gly Leu Leu Ala Ala Thr Asn Ala
 275 280 285
 Leu Thr Asn Gly Val Leu Pro Ala Val Gln Ser Phe Ser Cys Leu Pro
 290 295 300
 Tyr Gly Arg Leu Ala Tyr His Leu Ala Val Val Leu Gly Ser Ala Ala
 305 310 315 320
 Asn Pro Leu Ala Cys Phe Leu Ala Met Gly Val Leu Cys Arg Ser Leu
 325 330 335
 Ala Gly Leu Gly Gly Leu Ser Leu Leu Gly Val Phe Cys Gly Gly Tyr
 340 345 350
 Leu Met Ala Leu Ala Val Leu Ser Pro Cys Pro Pro Leu Val Gly Thr

<213> Homo sapiens

<400> 12

Met Ala Ala Pro Thr Pro Ala Arg Pro Val Leu Thr His Leu Leu Val
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Ala Leu Phe Gly Met Gly Ser Trp Ala Ala Val Asn Gly Ile Trp Val
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Glu Leu Pro Val Val Val Lys Glu Leu Pro Glu Gly Trp Ser Leu Pro
35 40 45

Ser Tyr Val Ser Val Leu Val Ala Leu Gly Asn Leu Gly Leu Leu Val
50 55 60

Val Thr Leu Trp Arg Arg Leu Ala Pro Gly Lys Asp Glu Gln Val Pro
65 70 75 80

Ile Arg Val Val Gln Val Leu Gly Met Val Gly Thr Ala Leu Leu Ala
85 90 95

Ser Leu Trp His His Val Ala Pro Val Ala Gly Gln Leu His Ser Val
100 105 110

Ala Phe Leu Ala Leu Ala Phe Val Leu Ala Leu Ala Cys Cys Ala Ser
115 120 125

Asn Val Thr Phe Leu Pro Phe Leu Ser His Leu Pro Pro Arg Phe Leu
130 135 140

Arg Ser Phe Phe Leu Gly Gln Gly Leu Ser Ala Leu Leu Pro Cys Val
145 150 155 160

Leu Ala Leu Val Gln Gly Val Gly Arg Leu Glu Cys Pro Pro Ala Pro
165 170 175

Ile Asn Gly Thr Pro Gly Pro Pro Leu Asp Phe Leu Glu Arg Phe Pro
180 185 190

Ala Ser Thr Phe Phe Trp Ala Leu Thr Ala Leu Leu Val Ala Ser Ala
195 200 205

Ala Ala Phe Gln Gly Leu Leu Leu Leu Pro Pro Pro Pro Ser Val
210 215 220

Pro Thr Gly Glu Leu Gly Ser Gly Leu Gln Val Gly Ala Pro Gly Ala
225 230 235 240

Glu Glu Glu Val Glu Glu Ser Ser Pro Leu Gln Glu Pro Pro Ser Gln
245 250 255

Ala Ala Gly Thr Thr Pro Gly Pro Asp Pro Lys Ala Tyr Gln Leu Leu
260 265 270

Ser Ala Arg Ser Ala Cys Leu Leu Gly Leu Leu Ala Ala Thr Asn Ala
275 280 285

Leu Thr Asn Gly Val Leu Pro Ala Val Gln Ser Phe Ser Cys Leu Pro

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Tyr Gly Arg Leu Ala	Tyr His Leu Ala Val Val	Leu Gly Ser Ala Ala		
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Asn Pro Leu Ala Cys Phe	Leu Ala Met Gly Val	Leu Cys Arg Ser Leu		
	325	330	335	
Ala Gly Leu Gly Ser Leu	Ser Leu Leu Gly Val	Phe Cys Gly Gly Tyr		
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Leu Met Ala Leu Ala Val	Leu Ser Pro Cys Pro	Pro Leu Val Gly Thr		
	355	360	365	
Ser Ala Gly Val Val Leu	Val Val Leu Ser Trp	Val Leu Cys Leu Gly		
	370	375	380	
Val Phe Ser Tyr Val Lys	Val Ala Ala Ser Ser	Leu Leu His Gly Gly		
	385	390	395	400
Gly Arg Pro Ala Leu Leu	Ala Ala Gly Val Ala	Ile Gln Val Gly Ser		
	405	410	415	
Leu Leu Gly Ala Val Ala	Met Phe Pro Pro Thr	Ser Ile Tyr His Val		
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Phe His Ser Arg Lys Asp	Cys Ala Asp Pro Cys	Asp Ser		
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 <211> 1473
 <212> DNA
 <213> Homo sapiens

<400> 13	
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<210> 14
 <211> 448
 <212> PRT
 <213> Homo sapiens

<400> 14
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 Glu Leu Pro Val Val Val Lys Asp Leu Pro Glu Gly Trp Ser Leu Pro
 35 40 45
 Ser Tyr Leu Ser Val Val Val Ala Leu Gly Asn Leu Gly Leu Leu Val
 50 55 60
 Val Thr Leu Trp Arg Arg Leu Ala Pro Gly Lys Gly Glu Gln Val Pro
 65 70 75 80
 Ile Gln Val Val Gln Val Leu Ser Val Val Gly Thr Ala Leu Leu Ala
 85 90 95
 Pro Leu Trp His His Val Ala Pro Val Ala Gly Gln Leu His Ser Val
 100 105 110
 Ala Phe Leu Thr Leu Ala Leu Val Leu Ala Met Ala Cys Cys Thr Ser
 115 120 125
 Asn Val Thr Phe Leu Pro Phe Leu Ser His Leu Pro Pro Pro Phe Leu
 130 135 140
 Arg Ser Phe Phe Leu Gly Gln Gly Leu Ser Ala Leu Leu Pro Cys Val
 145 150 155 160
 Leu Ala Leu Val Gln Gly Val Gly Arg Leu Glu Cys Pro Pro Ala Pro
 165 170 175
 Thr Asn Gly Thr Ser Gly Pro Pro Leu Asp Phe Pro Glu Arg Phe Pro
 180 185 190
 Ala Ser Thr Phe Phe Trp Ala Leu Thr Ala Leu Leu Val Thr Ser Ala
 195 200 205
 Ala Ala Phe Arg Gly Leu Leu Leu Leu Leu Pro Ser Leu Pro Ser Val
 210 215 220
 Thr Thr Gly Gly Ser Gly Pro Glu Leu Gln Leu Gly Ser Pro Gly Ala
 225 230 235 240
 Glu Glu Glu Glu Lys Glu Glu Glu Glu Ala Leu Pro Leu Gln Glu Pro
 245 250 255

Pro Ser Gln Ala Ala Gly Thr Ile Pro Gly Pro Asp Pro Glu Ala His
260 265 270

Gln Leu Phe Ser Ala His Gly Ala Phe Leu Leu Gly Leu Met Ala Phe
275 280 285

Thr Ser Ala Val Thr Asn Gly Met Leu Pro Ser Val Gln Ser Phe Ser
290 295 300

Cys Leu Pro Tyr Gly Arg Leu Ala Tyr His Leu Ala Val Val Leu Gly
305 310 315 320

Ser Ala Ala Asn Pro Leu Ala Cys Phe Leu Ala Met Gly Val Leu Cys
325 330 335

Arg Ser Leu Ala Gly Leu Val Gly Leu Ser Leu Leu Gly Met Leu Phe
340 345 350

Gly Ala Tyr Leu Met Ala Leu Ala Ile Leu Ser Pro Cys Pro Pro Leu
355 360 365

Val Gly Thr Thr Ala Gly Val Val Leu Val Val Leu Ser Trp Val Leu
370 375 380

Cys Leu Cys Val Phe Ser Tyr Val Lys Val Ala Ala Ser Ser Leu Leu
385 390 395 400

His Gly Gly Gly Arg Pro Ala Leu Leu Ala Ala Gly Val Ala Ile Gln
405 410 415

Val Gly Ser Leu Leu Gly Ala Gly Ala Met Phe Pro Pro Thr Ser Ile
420 425 430

Tyr His Val Phe Gln Ser Arg Lys Asp Cys Val Asp Pro Cys Gly Pro
435 440 445

<210> 15
<211> 1347
<212> DNA
<213> Baboon

<400> 15
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cagagctttt	cctgtttgcc	ctatgggcgc	ttggcctacc	acctggctgt	ggtgctgggc	960
agtgccgcca	accccttgc	ctgcttcctg	gccatgggcg	tgctgtgcag	gtccctggca	1020
gggctgggtg	gtctttctct	gctgggcatg	ctctttgggg	cctacctgat	ggtactggca	1080
atcctgagcc	cctgcccacc	cctggtgggc	accaccgcag	gggtggctct	tgtggtactg	1140
tcgtgggtgc	tgtgtctttg	tgtgttctca	tacgtgaagg	tggctgcaag	ctccctgctg	1200
catggtgggg	gtcggccggc	attgctggcg	gctggtgtgg	ccatccagat	gggctccctg	1260
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<210> 16
 <211> 448
 <212> PRT
 <213> Baboon

<400> 16

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			20					25					30		
Glu	Leu	Pro	Val	Val	Val	Lys	His	Leu	Pro	Glu	Gly	Trp	Ser	Leu	Pro
		35					40					45			
Ser	Tyr	Leu	Ser	Val	Val	Val	Ala	Leu	Gly	Asn	Leu	Gly	Leu	Leu	Val
	50					55					60				
Val	Thr	Leu	Trp	Arg	Arg	Leu	Ala	Pro	Gly	Lys	Gly	Glu	Arg	Val	Pro
65					70					75					80
Ile	Gln	Val	Val	Gln	Val	Leu	Ser	Val	Val	Gly	Thr	Ala	Leu	Leu	Ala
				85					90					95	
Pro	Leu	Trp	His	His	Val	Ala	Pro	Val	Ala	Gly	Gln	Leu	His	Ser	Val
			100					105					110		
Ala	Phe	Leu	Thr	Leu	Ala	Leu	Val	Leu	Ala	Leu	Ala	Cys	Cys	Thr	Ser
		115					120					125			
Asn	Val	Thr	Phe	Leu	Pro	Phe	Leu	Ser	His	Leu	Pro	Pro	Pro	Phe	Leu
	130					135					140				
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145					150				155					160	
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			165					170						175	
Thr	Asn	Gly	Thr	Ser	Gly	Pro	Pro	Leu	Asn	Phe	Pro	Glu	Arg	Phe	Pro
		180						185					190		
Ala	Ser	Thr	Phe	Tyr	Trp	Ala	Leu	Thr	Ala	Leu	Leu	Val	Thr	Ser	Ala
		195				200						205			
Ala	Ala	Phe	Gln	Gly	Leu	Leu	Leu	Leu	Pro	Ser	Leu	Pro	Ser	Val	
	210					215				220					

Thr Thr Gly Gly Ala Gly Pro Glu Leu Pro Leu Gly Ser Pro Gly Ala
 225 230 235 240
 Glu Glu Glu Glu Lys Glu Glu Glu Glu Ala Leu Pro Leu Gln Glu Pro
 245 250 255
 Pro Ser Gln Ala Ala Gly Thr Ile Pro Gly Pro Asp Pro Glu Ala His
 260 265 270
 Gln Leu Phe Ser Ala His Gly Ala Phe Leu Leu Gly Leu Leu Ala Ile
 275 280 285
 Thr Ser Ala Leu Thr Asn Gly Val Leu Pro Ala Val Gln Ser Phe Ser
 290 295 300
 Cys Leu Pro Tyr Gly Arg Leu Ala Tyr His Leu Ala Val Val Leu Gly
 305 310 315 320
 Ser Ala Ala Asn Pro Leu Ala Cys Phe Leu Ala Met Gly Val Leu Cys
 325 330 335
 Arg Ser Leu Ala Gly Leu Val Gly Leu Ser Leu Leu Gly Met Leu Phe
 340 345 350
 Gly Ala Tyr Leu Met Val Leu Ala Ile Leu Ser Pro Cys Pro Pro Leu
 355 360 365
 Val Gly Thr Thr Ala Gly Val Val Leu Val Val Leu Ser Trp Val Leu
 370 375 380
 Cys Leu Cys Val Phe Ser Tyr Val Lys Val Ala Ala Ser Ser Leu Leu
 385 390 395 400
 His Gly Gly Gly Arg Pro Ala Leu Leu Ala Ala Gly Val Ala Ile Gln
 405 410 415
 Met Gly Ser Leu Leu Gly Ala Gly Thr Met Phe Pro Pro Thr Ser Ile
 420 425 430
 Tyr His Val Phe Gln Ser Arg Lys Asp Cys Val Asp Pro Cys Gly Pro
 435 440 445

<210> 17
 <211> 445
 <212> PRT
 <213> Artificial

<220>
 <223> Consensus sequence of SEQ ID NO: 12, 14 and 16.

<400> 17
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 Ala Leu Phe Gly Met Gly Ser Trp Ala Ala Val Asn Gly Ile Trp Val
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Glu Leu Pro Val Val Val Lys Leu Pro Glu Gly Trp Ser Leu Pro Ser
 35 40 45
 Tyr Leu Ser Val Val Val Ala Leu Gly Asn Leu Gly Leu Leu Val Val
 50 55 60
 Thr Leu Trp Arg Arg Leu Ala Pro Gly Lys Gly Glu Gln Val Pro Ile
 65 70 75 80
 Gln Val Val Gln Val Leu Ser Val Val Gly Thr Ala Leu Leu Ala Pro
 85 90 95
 Leu Trp His His Val Ala Pro Val Ala Gly Gln Leu His Ser Val Ala
 100 105 110
 Phe Leu Thr Leu Ala Leu Val Leu Ala Leu Ala Cys Cys Thr Ser Asn
 115 120 125
 Val Thr Phe Leu Pro Phe Leu Ser His Leu Pro Pro Pro Phe Leu Arg
 130 135 140
 Ser Phe Phe Leu Gly Gln Gly Leu Ser Ala Leu Leu Pro Cys Val Leu
 145 150 155 160
 Ala Leu Val Gln Gly Val Gly Arg Leu Glu Cys Pro Pro Ala Pro Thr
 165 170 175
 Asn Gly Thr Ser Gly Pro Pro Leu Asp Phe Pro Glu Arg Phe Pro Ala
 180 185 190
 Ser Thr Phe Phe Trp Ala Leu Thr Ala Leu Leu Val Thr Ser Ala Ala
 195 200 205
 Ala Phe Gln Gly Leu Leu Leu Leu Leu Pro Ser Leu Pro Ser Val Thr
 210 215 220
 Thr Gly Gly Gly Pro Glu Leu Gln Leu Gly Ser Pro Gly Ala Glu Glu
 225 230 235 240
 Glu Glu Lys Glu Glu Glu Glu Ala Leu Pro Leu Gln Glu Pro Pro Ser
 245 250 255
 Gln Ala Ala Gly Thr Ile Pro Gly Pro Asp Pro Glu Ala His Gln Leu
 260 265 270
 Phe Ser Ala His Gly Ala Phe Leu Leu Gly Leu Leu Ala Thr Ser Ala
 275 280 285
 Leu Thr Asn Gly Val Leu Pro Ala Val Gln Ser Phe Ser Cys Leu Pro
 290 295 300
 Tyr Gly Arg Leu Ala Tyr His Leu Ala Val Val Leu Gly Ser Ala Ala
 305 310 315 320
 Asn Pro Leu Ala Cys Phe Leu Ala Met Gly Val Leu Cys Arg Ser Leu
 325 330 335

Ala Gly Leu Val Gly Leu Ser Leu Leu Gly Met Leu Phe Gly Ala Tyr
 340 345 350

Leu Met Ala Leu Ala Ile Leu Ser Pro Cys Pro Pro Leu Val Gly Thr
 355 360 365

Thr Ala Gly Val Val Leu Val Val Leu Ser Trp Val Leu Cys Leu Cys
 370 375 380

Val Phe Ser Tyr Val Lys Val Ala Ala Ser Ser Leu Leu His Gly Gly
 385 390 395 400

Gly Arg Pro Ala Leu Leu Ala Ala Gly Val Ala Ile Gln Val Gly Ser
 405 410 415

Leu Leu Gly Ala Gly Ala Met Phe Pro Pro Thr Ser Ile Tyr His Val
 420 425 430

Phe Gln Ser Arg Lys Asp Cys Val Asp Pro Cys Gly Pro
 435 440 445

<210> 18

<211> 19

<212> DNA

<213> Artificial

<220>

<223> PCR Primer Oligonucleotide

<400> 18

cccagtggca ggacagttg

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<210> 19

<211> 16

<212> DNA

<213> Artificial

<220>

<223> PCR Primer Oligonucleotide

<400> 19

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<210> 20

<211> 20

<212> DNA

<213> Artificial

<220>

<223> PCR Primer Oligonucleotide

<400> 20

gtkaccttyg cyykwcttg

20

<210> 21
<211> 19
<212> DNA
<213> Artificial

<220>
<223> PCR Primer Oligonucleotide

<400> 21
ggagykgggt cccacctg 19

<210> 22
<211> 17
<212> DNA
<213> Artificial

<220>
<223> PCR Primer Oligonucleotide

<400> 22
aatggcagca ccymcgc 17

<210> 23
<211> 18
<212> DNA
<213> Artificial

<220>
<223> PCR Primer Oligonucleotide

<400> 23
tcaggggcca caggggtc 18